MONEY IN GOATS

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— BY —

W. SHELDON BULL

PRICE, 25 CENTS

THE WAKEFIELD COMPANY
142 Wakefield Avenue
BUFFALO, N. Y.

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BY W. SHELDON BULL

(FROM THE ILLUSTRATED BUFFALO EXPRESS)

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ACKNOWLEDGEMENT.

In the preparation of the following pages use has been made to some extent of material previously published in the following magazine articles: "Nanny, The Poor Man's Cow" in "Country Life in America," May, 1907; "Our Back-Yard Dairy" in "Good Housekeeping," April, 1908; "One Family's Solution of the Milk Problem" in "Suburban Life," October, 1909; and "Our Piano-Box Milking-Shed" in the Christmas number of "Country Life in America," for 1909. Acknowledgement is gratefully made to the editors of the above mentioned magazines for their courtesy in placing this matter again at my disposal.

This material, however, has been largely revised and re-written, and much new matter added, in an endeavor to present the case of the goat from a commercial point of view, and in quite a different manner from that in which "Nanny" is generally put before the public.

W. SHELDON BULL.

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MONEY IN GOATS

"The relations of the goat to mankind," says Shaler in "Domesticated Animals," "are in certain ways peculiar. The creature has long been subjugated, probably having come into the human family before the dawn of history. It readily cleaves to the household and exhibits much more intelligence than the other members of our flocks and herds. It yields good milk, the flesh is edible, though in the old animals not savory, and the hair can be made to vary in a larger measure than any of our animals which are shorn. Yet this creature has never obtained the place in relation to man to which it seems entitled."

The lack of appreciation of the economic value of the Goat, in this country, is doubtless due in great measure to the fact that, with the exception of the Angora Goat, the commercial possibilities of the animal are not yet sufficiently understood.

"Asia Minor is the home of the Angora, and the rearing of the animals there has been carried on for an unknown number of generations. In South Africa and in the United States it is of comparative modern development. British manufacturers finding the supply of Turkish mohair insufficient for trade requirements, secured the introduction of Angoras into South Africa, and now the supply of mohair is double the output of Asia Minor."—From the "Textile American," April, 1905.

While the Angora Goat has been bred in this country for over fifty years, it is only within a comparatively recent period that this animal has been utilized to any great extent. Dr. James B. Davis, of South Carolina, is credited with having been the first to introduce the Angora into the United States. This importation, made in 1849, has been augmented by breeding and by a number of subsequent importations by different individuals, so that today there are a large number in this country, to be found in almost every state in the Union, but principally in the west and southwest.

The chief value of the Angora consists in its fleece which, commercially known as Mohair, is largely used in the making of various fabrics. The production of Mohair in this country was small for many years, but it has recently developed into an important industry.

The Angora is also valuable as a brushwood destroyer, its flesh is palatable and nutritious, and occasionally an excellent milker is found among them.

While goats have been utilized as brushwood destroyers to a certain extent in various sections of our country, their full value for this purpose has not been generally recognized. There

A SAANEN GOAT BROWSING ON THE HILLSIDE.

are millions of acres of unproductive land in the United States, which by the use of the goat might be cleared most economically, and thus made productive.

Regarding this, W. A. Heather writes as follows: "There is an immense amount of waste land, not only in the West, but all through the South and East, that is especially adapted to the raising of Angora goats, and so far as the human mind can see at the present time, is absolutely useless for any other purpose; these lands have been lying idle and useless for untold ages begging to be put to some use that would be of benefit to the human family and less of a reproach to the intelligence of the American people. These lands if properly used for this purpose, would in the course of time, yield untold wealth to the owners and be a source of immense revenue to the government."

"It might be just as well for Uncle Sam to take a little interest in and have a word to say about a proposition that is loaded with such immense future possibilities as the Angora goat industry of the United States is. Our preachers and lawyers and doctors and statesmen and educators have for years been

preaching the doctrine of first principles and getting back to the land to the end that our future generations may not be compelled to swelter and live and die in the pestilential slums of our great cities, and at the same time in the humble Angora goat they have neglected an argument that would perhaps induce more people to leave the congested city than any other that they could possibly advance, the opportunity that the Angora goat affords to those desirous of leaving the crowded city and engaging in pastoral pursuits is almost unlimited, there are untold millions of acres of waste lands and abandoned farms in these United States, the value of which is unknown to the people of the great cities, and which could be quickly and cheaply converted into prosperous and thriving Angora goat ranches that would yield an easy living to the owner and a competence and interest in life to his children and grandchildren. There is no class of live stock that is more domestic or easily handled or that shows more response to kind treatment from his master than the Angora goat, he is inoffensive and gentle to a degree that is seldom attained by any other kind of stock."

"It seems to me that there is a crying need that our Bureau of Animal Industry issue a new bulletin of complete and accurate information on this subject and give it a wide distribution, and that our national law makers are furnished with some information from first hands that will enable them to know just what the needs of the industry are, and this they can get from neither the foreigner or manufacturer; he does not know, and if he did he would not tell."—From the "Shepherd's Journal, June, 1911.

Black, in his "New Industry," also says: "The brush question is a most serious one in many of our states. As long as the land can be kept under cultivation brush can be kept down, but when it is once thrown open to pasture, briars and brush of all description begin to grow, and soon cover the entire surface."

"The goat is the best land grubber on earth. He will not only destroy the brush, but will enrich and trample the soil more thoroughly than any other animal can possibly do, which is so essential in producing a fine stand of blue grass; and he will thoroughly remove all noxious weeds as well."

"Common goats will answer the purpose we need them for, even better than the Angora, from the fact that they are stronger bodied, and are not burdened with long hair, which is often torn out on the brush when feeding."

The term "Common Goat" is generally applied to all goats not belonging to either the Angora or the Milch breeds. They consist principally of nondescript animals, of all sorts, sizes and colors, a considerable percentage having long hair. The long-haired common goats, however, are suitable neither for the production of skins, nor as foundation stock for grade Angoras.

The Native or Common goat, as yet, plays but an infinitesemal part as a factor in the animal industries of this country.

But while comparatively few goats are kept in the United States, and but scant attention is paid to these useful little animals, in the East, in Asia, especially, and in some parts of Africa, goats have from time immemorial, constituted an important part of the flock, and have been a source of wealth to the people. In Europe, also, the goat has been quite generally appreciated as one of the valuable domestic animals.

However, when it becomes more widely understood that we are sending abroad from twenty to thirty millions of dollars annually for goat-skins, because practically none are produced by us; notwithstanding that the natural conditions, in this broad land of ours, are favorable for raising goats, which produce just such skins as we import; is it unreasonable to look forward to such a growth of the industry, in this country, as will supply our home market with at least a portion of the millions of goat-skins used year by year?

While practically all of the goat-skins entering into the commerce and manufacture of this country are imported, the extent and value of these importations, as shown by the following table, are not generally known nor appreciated.

Imports of Goat-Skins.

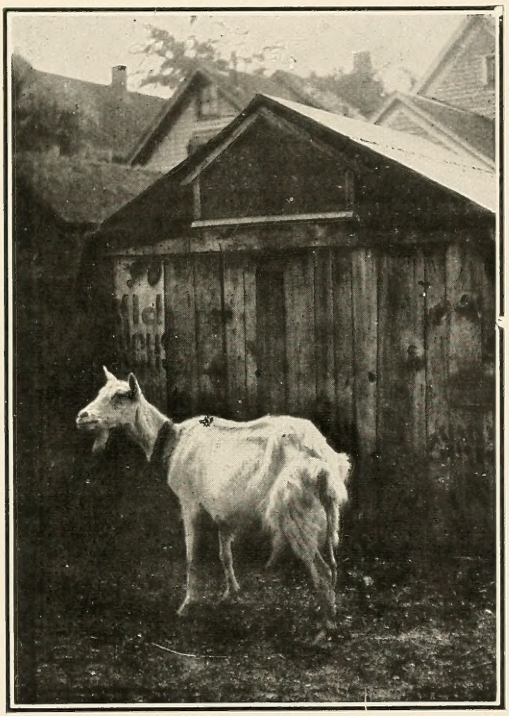
Fiscal years	Quantity, Pounds	Value, Dollars
1906	110,716,107	$ 31,704,981
1907	98,085,209	31,718,981
1908	63,600,189	17,316,963
1909	103,390,342	25,862,671
1910	115,555,025	30,801,304
Total	491,346,872	$137,404,900

These foreign goat-skins were brought into this country free of duty, doubtless owing to the great demand for them, and to the fact that they do not come into competition with a domestic industry of sufficient importance to be deemed worthy of the consideration of Congress.

The Milch Goat also has apparently not been considered seriously as worthy of a place among our animal industries. This may be largely owing to the fact that our native goats have been aimlessly and carelessly bred, and without sufficient regard to the production of milk. They are consequently ill-suited for dairy purposes. The nondescript and undersized little "Nanny-goats" with small udders, often seen tethered or running loose on the commons or vacant lots in our towns and cities, give, as a rule, but little milk and produce inferior offspring. Unfortunately, it is from such mongrel animals that an estimate of the whole species is generally formed.

In Switzerland, however, a process of careful selection and breeding, carried on through many centuries, has produced Milch

goats that are probably the most efficient milk-producing creatures, for their size, in existence. The best known of these breeds in this country are the Saanen, a hornless, short-haired white or cream-colored goat; and the Toggenburg, a hornless, short-haired, fawn-colored goat, peculiarly marked with a white line down each side of the face. The legs are also covered up to the knees with white hair. Both of these breeds, which are much larger than our common goats, have a deer-like shape and carriage, and are like Jersey cattle, in that they are somewhat lean and bony, and seem to throw all the strength of their constitutions into the production of milk.



BABETTE, AN IMPORTED SAANEN MILCH GOAT.

In England, also, under the fostering care of the British Goat Society, Milch goat breeding has been entered upon as systematically as any other branch of stock raising, the same strictness in regard to registry being required.

At various periods in the past, specimens of foreign breeds of Milch goats were brought to the United States, some of them possibly even before the Davis importation of Angoras in 1849. Dr. John Bachman, the naturalist, in a report made to the Southern Central Agricultural Association, regarding the Davis

Angoras, which was published in 1857, speaks of: "The several large breeds, such as the Scind, the Maltese and the Swiss goats, which were from time to time introduced as milking animals into this country."

In 1863, Israel S. Diehl wrote concerning an "Assyrian" goat in the possession of General J. S. Gee, at Brownsville, Pa., that gave a gallon of milk per day after the weaning of its kid. Diehl also mentioned having in his own possession at that time a similar goat, together with some Maltese and Cachmere grades, and further said that "among the most valuable milkers we have the Maltese, the Swiss, the Assyrian, the Syrian, the Scinde, the Spanish and the Welsh goats."

Unfortunately there was no apparent effort made to keep the blood of these breeds pure. Dr. Bachman, indeed, said regarding the imported Milch goats, mentioned in his report referred to above, that they "were after a period neglected."

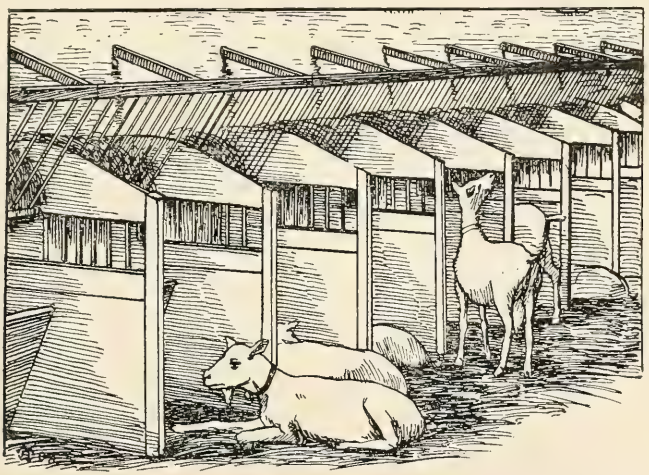
In more recent years, in 1893, and notably in 1904, 1905 and 1906, importations of Saanens, Toggenburgs, and Schwartzenburg-Guggisbergers were made. These goats or their decendents, together with others since imported, are now in the possession of breeders and fanciers, located in widely separated sections of the country, who, in the majority of cases, have gone into the industry, or fancy, on a small scale. The importance of every possible effort being made to keep the blood of these breeds pure, can scarcely be overestimated, nor too strenuously dwelt upon, when one takes into consideration how great will be the benefit resulting therefrom, not only to the individual breeder, but for the advancement in this country of the industry in general.

With reference to improving our native goats, Diehl said: "Here, as in all departments of stock breeding, no doubt great improvements can be made, since goats possess all the characteristics of other domestic animals. A variety of goats exist throughout our own country, collected from various countries of Europe and portions of Asia and Africa, from which the improved individuals may be selected and bred from."

Both the Saanen and the Toggenburg breeds are well adapted to our climate. They breed true to type and have a remarkable power of transmitting their characteristics to their offspring (many half-breed animals showing all of the distinguishing peculiarities of the race), they are therefore particularly valuable for the purpose of improving our native stock. By crossing the males of these large-sized, short-haired, deep-milking breeds with short-haired Common does, selected for their milking qualities, and for size and constitution, native breeds of large, hardy goats might in a comparatively short period of time be established. These would prove commercially valuable when used either for dairying, for the production of skins, for destroying brushwood, or as foundation stock for breeding grade Angoras, instead of the Mexican goat. The fact that the market

for goat meat is constantly increasing should also be borne in mind whenever the commercial value of the animal is under consideration.

With reference to breeding grade Angoras, Black says: "I knew that it would be impossible to find enough graded goats to meet the demand that was springing up all over the country, and I realized if the farmers of the United States expected to engage in the Angora goat industry they would have to begin at the bottom as we all had done, and grade up the smooth-haired goat. We have an abundance of full-blooded males to stock the entire country, but the Mexican female must be used as a foundation, if we expect to build up the industry in any reasonable time. This was the course pursued in South Africa, except that they used the Boer goat instead of the Mexican which is practically the same class of stock, strong and vigorous, with smooth hair; and it was followed in Turkey, to a large extent, as soon as the demand for Mohair exceeded the annual supply, which took place between 1860 and 1870."



INTERIOR ARRANGEMENT GOAT BARN (Copied from Johannes Schneider)

"There is very little doubt but that there would be quite a demand for Milch goats if farmers in the neighborhood of our large towns and cities were prepared to furnish them. It often occurs that an infant is left without a mother to nourish it, and in such cases, almost any sum would be paid for a goat rather than resort to the risk attending the use of the dairyman's stuff.

"I feel sure that this branch of the industry may be made to yield very profitable returns, and in grading up a lot of common goats, a very good market can be found for the old does, after they have been used to propagate the Angora."

As it has been proved beyond refutation that human infants deprived of their mother's milk, thrive upon goat's milk better than upon that of any other animal, the importance of Milch goat dairying cannot fail to appeal, not only to parents of young children, but to physicians and to all others who have the future wellfare of our country at heart; for as Dr. William Ewart says, "good milk for infants is a national concern, since deterioration of the race and depopulation by infant mortality and by tuberculosis are mainly milk questions."—From "The Lancet," London, December 12, 1906.

"One of the smallest babies ever seen in St. Mary's hospital was borne there yesterday * * The doctors have prescribed as the infant's food modified goat's milk."

"The foregoing represents a news item excerpted from a New England paper of recent date. It commanded my attention and interest strongly at the time of first reading, not by reason of the tininess of the baby," says Professor T. R. Arkell, of the New Hampshire Experiment Station, "but by the fact that some doctors at least considered it advisable to rear infants on goat's milk. This decision of the doctors must have been arrived at after a deliberate and careful examination of the quality of goat's milk. No medical doctor in reputable standing can afford to be hasty in his conclusions, especially if the substance of those conclusions is given unreservedly to the public. The public is a hard arbiter and yet a fair one. Its vagaries and mistakes are few. The claims of anything whatever must be well founded and meritorious before it receives even the faintest approval of a majority of the people."

"Undoubtedly the public is beginning to recognize the great food value and freedom from tubercular disease of goat's milk. Wholesome, sanitary milk is the present cry. Wealthy consumers will pay almost any price, where they can be assured they are obtaining clean milk. The fact that bovine tuberculosis is communicable to man and that milk is one of the most effective vehicles for the growth and transmission of the tubercle bacillus is making people cautious of the milk they drink. They demand clean milk from healthy animals. To meet this demand certified milk was placed on the market and it possesses a wide sale at a high price. Goat's milk should be sold at equally as great a price, if not generally greater, as certified milk from the cow, providing anything like reasonable methods of cleanliness anent housing and milking are adopted, for tuberculosis in the goat is exceedingly rare and tubercular lesions, even when found, always slight. This fact in itself, when the public distinctly recognizes and appreciates it, should render the sale of goat's milk comparatively easy."

"Recently I visited a lady who had just purchased an American goat, but after using the milk several times stated it had such

a horrid flavor and odor that no one would drink it. Little wonder, too! The goat was kept in an unused hog barn, where conditions were filthy and the goat, being dirty and unkempt, possessed not only its own natural odor in its strongest and most disagreeable form, but that of the former inmate of the enclosure as well—the hog. Within a few hours I had corrected these conditions by thoroughly washing the goat and placing it in a clean pen. The milk that night the lady declared delicious. Goat's milk, it is true, has a somewhat characteristic aroma and flavor, but it is by no means pronounced and can scarcely ever be distinguished from cow's except by the extra sweetness and creaminess, where strict cleanliness is observed. In fact, any person who has once drunk clean goat's milk cannot help but grow fond of it. It is highly nutritious and is richer in butter fat than cow's milk."—From the "Shepherd's Journal," July, 1911.

ON THE MILKING-PLATFORM, FEEDING AND READY TO BE MILKED.

The neglect in using the Milch goat for dairy purposes in this country is due, to a considerable extent perhaps, to prejudice arising from the ridicule of which the little animal is so frequently the undeserved victim. But more largely owing to the fact that the advantages of goat-dairying, both from a hygienic and commercial point of view, are but imperfectly understood.

In this connection Spargo, in "The Common Sense of the Milk Question," says: "The neglect of the goat as a milch animal, especially as a provider of milk for infants, is very much to be deplored. The animal seems to be altogether well fitted to be the wet nurse of the human infant, much more so than the cow, and it is a great pity that ignorance concerning its habits and qualities should stand in the way of its more general employment. That an extensive use of its milk in place of that of the cow would lead to a considerable reduction in the enormous mortality from the various forms of tuberculosis which afflict infants is highly probable, indeed, practically certain. It is to be hoped that the Department of Agriculture at Washington, and the several state bureaus, will see fit to make known the truth concerning the much maligned goat, and to encourage its breeding and use for milch purposes."

"There are several reasons why goat's milk is superior to cow's milk as a substitute for breast milk in infant feeding. In the first place, while the cow is particularly subject to a specially virulent form of tuberculosis, which dread disease it is capable of acquiring from man, and of transmitting to man in its milk, through the infection of the digestive tract, the goat is practically immune from the disease."

The following table, compiled by the writer, from statistics found in the Annual Reports of the Bureau of Animal Industry, U. S. Department of Agriculture, gives the number of Goats inspected at the time of slaughter by the Federal meat-inspection service, together with the number passed for food, and also the number condemned, under the law of June 30, 1906:

Post-mortem inspections, fiscal years 1907 to 1910.

Fiscal year	Kind of animals	Total inspected	Passed for food	Condemned	Condemned for Tuberculosis
1907	Goats	52,149	52,106	43	**0**
1908	Goats	45,953	45,920	33	**0**
1909	Goats	69,193	69,111	82	**0**
1910	Goats	115,811	115,585	226	**0**
	Total	283,106	282,722	384	**0**

These goats were slaughtered in a number of different places, scattered throughout the country, and came from all sections of the United States, but mostly from the West and Southwest.

The fact that not even one tubercular goat was found, while only 384 were condemned out of a total of 283,106 inspected in four years, speaks volumes in proof of the general healthfulness of the animal, and furnishes an indisputable confirmation of the claim that the goat is immune to tuberculosis.

Additional evidence, however, might easily be given, for it

is true, as Spargo asserts that, "the testimony upon this point is overwhelming." The same author also declares that "if there were no other advantage in goat's milk, this immunity from the disease which scourges mankind ought to make it popular, providing that its milk proved equally as nutritious and digestible as cow's milk. If we were choosing a foster-mother or wet nurse for an infant, and there were two candidates apparently equally desirable in all other respects save this one, both being plentifully supplied with good milk, but one of them the victim of an active and malignant disease, is there any intelligent being who doubts what the choice would be? Yet, in the case of choosing an animal to be virtually the wet-nurse of the nation, we have chosen the one infected with disease, and are constantly passing on the infection to the little ones."

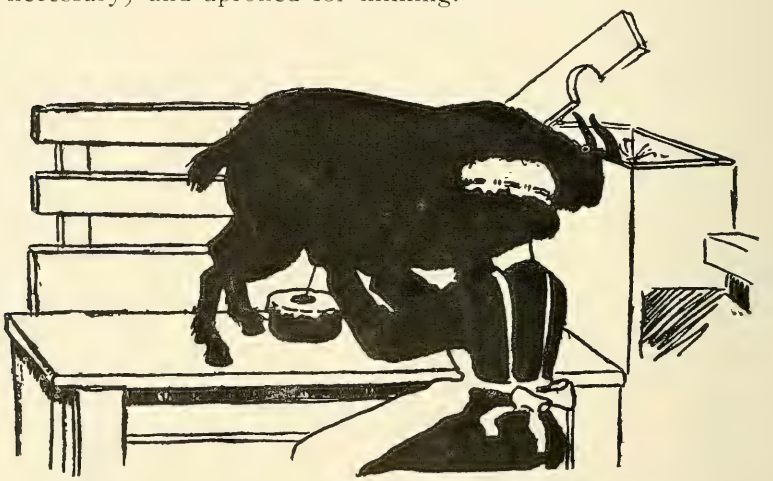
Is goat's milk as "nutritious and digestible as cow's milk"? In regard to this, Dr. William Wright says: "It is surprising also that there should be any hesitation in admitting the superiority of goats' milk over cows' milk as a food for infants. The casein of goats' milk forms a flocculent and much more digestible curd than that of the cow—a very important matter in the rearing of infants. The hard curd of cows' milk is responsible for a good deal of indigestion and diarrhoea of infants. I feel safe in stating that less evil results in this direction would occur by the consumption of goats' milk than with cows' milk. The nourishment obtained from goats milk is also superior to that of cows' milk and is more suitable for infants."—From "The Lancet," London, November 3, 1906.

In this connection also, "The Lancet," May 25, 1907, says concerning an analysis of goats' milk made in the laboratory of that journal: "There are points about goats' milk in connection with infant feeding which deserve more attention than they have hitherto received. It is well known, for example, that the goat is remarkably resistant to tuberculosis; moreover, the milk appears to be more digestible than cows' milk, because its casein forms a flocculent rather than a hard, cheesy curd. It has been stated, however, that the unpleasant odor of goats' milk is an unfavorable feature. As a matter of fact, goats' milk can be as sweet in this regard as cows' milk, so long as the animals are kept under clean and proper conditions. A sample of goats milk submitted to us was perfectly sweet to the taste and smell, and there was no suggestion at all of the so-called goat flavor. The milk represented the drawing from a mixed herd which was entirely stall-fed, the dry foods given in the winter being replaced by a liberal allowance of grass and green stuff in the summer. The animals are carefully groomed and their udders washed daily."

"On analysis the milk gave the following results: Total solid matter, 14.57 per cent.; milk sugar, 5.05 per cent.; fat, $5.27 per cent.; protein, 3.43 per cent.; and mineral matter, 0.82 per cent.

"It will be seen that the milk is of excellent quality, containing a maximum proportion of fat."

Among other advantages in favor of the goat as a dairy animal, Dr. J. Finley Bell, in a paper read before the New York Academy of Medicine, on "Some Fat Problems and Goat's Milk in Infant Feeding," claims the following: "She is more docile, less excitable, not subject to tuberculosis or other disease in this climate. Being a browser rather than a grazer, she will thrive where cows would not; and above all, she is cleanly. Her excrement is solid and her tail short, consequently she is not covered with manure as is a cow. It is safe to assert that the production of cow's milk free from manure bacteria is commercially impossible. Not so with the goat; she can be easily washed (tubbed if necessary) and aproned for milking."



MILKING AT THE FLORA McKEAND GOAT FARM, WILLINK, N. Y.

The Milch goat is a persistent, regular and economic producer of milk. Foreign writers on the subject agree in saying that, "many goats yield ten times their weight of milk annually, and exceptional animals as much as eighteen times their weight."

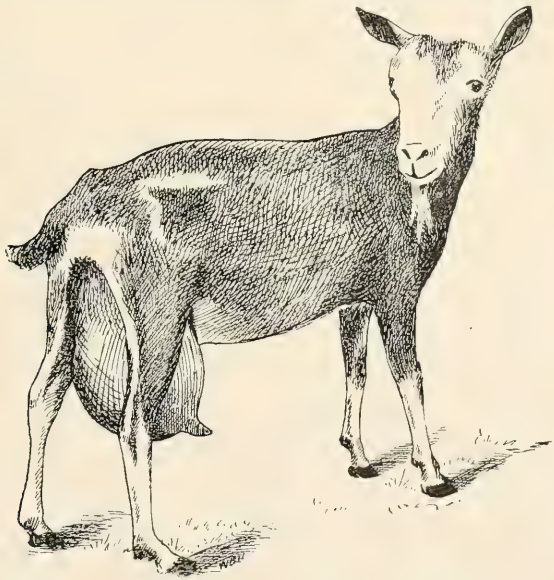
Petersen, a German authority, says: "In its form, the goat exhibits, as it were, the complete type of a milch animal, and by demonstration gives annually ten to sixteen times its own weight in milk, whereas in the case of the cow we must be well satisfied with five times its weight."

Actual tests made in Germany go to prove that eight goats will subsist upon the same amount of feed as that required for one cow, and at the same time yield a good flow of milk.

The yield and the period of lactation of the principal prize winners at the Milking Competition for Goats held at the Dairy Show, in Agricultural Hall, London, England, on October 8th and 9th, 1907, was as follows: Sedgemere Capella, the winner of

the first prize, after having been in milk a period of 183 days, gave on the first day of the competition slightly over 9 lbs., and on the second day 8 lbs. It will be more generally understood what this means, when it is stated that 10 lbs. represents one gallon. Sedgemere Faith, the second prize winner, after having been in milk 189 days, gave on the first day 7.9 lbs., and the next day 6.8 lbs. The winner of the third prize, Sedgemere Louise, after having been in milk since January 11th, 1906, a remarkable period of 635 days, gave on the first day 3.3 lbs., and on the second day 3.5 lbs.

An authenticated five days' test of the milking powers of Sedgemere Faith, the second prize winner mentioned above, was made in 1905 under the direct supervision of the Hon. Secretary of the British Goat Society, Mr. H. S. Holmes-Pegler. The goat was milked twice daily, and the milk carefully weighed as well as measured, in the presence of Mr. Pegler. The quantity produced daily was, on an average, 10 lbs., 5 oz., or more than a gallon. In the last twenty-four hours during which she was



SEDGEMERE FAITH, A TYPE OF GOAT FOUND ON THE SWISS ALPS AND IN THOSE PORTIONS OF FRANCE ADJACENT THERETO.

under examination, the yield was 10 lbs., 10½ oz., or exactly a gallon and half a pint.

This splendid showing was made after the goat had been in milk nearly five months, and the season was just at the close of summer, when most goats which have kidded in the spring fall off in their yield.

M. Joseph Crepin, in "La Chevre," says that "Alpine goats well cared for can continue in milk without renewing it by a new gestation, during two or even three years in succession. Each year, however, the milk yield diminishes toward Autumn and is reduced one-half during the winter. Toward spring time the milk yield increases, so that the goat is capable of giving almost as much as when fresh.

With regard to the habits and disposition of the female Milch goat, much may be said in her favor. With her face and dress always neat, she is the tidiest and daintiest eater of the animal family. She is very particular about her food and will eat nothing that is soiled or tainted. When pastured she delights in picking a morsel here and there, changing from grass to the sweet tender shoots of weeds and bushes, and nipping off the tender buds and leaves of young trees. A grown animal, while browsing, will sometimes stand erect and nip a leaf six feet from the ground.

She is gentle, playful and intelligent, and the readiness with which she accommodates herself to any situation in which she may be placed is most remarkable. Whether turned loose on a common, or out in a yard, or tethered on a grass-plot with a "lean-to" for a shelter, or confined in a stable and stall-fed, she seems equally content and grateful for the very few favors she usually receives.

While it is true that the ideal locality for goats is one that is high and rocky and overgrown with weeds, briars, brush and small trees, as they are by nature and preference browsing animals, in this respect being an exception to all other domestic stock, it is a fact that such a location is not essential. The Milch goat will thrive and produce a plentifully supply of rich milk when tethered on grass land, in addition to stall-feeding, if comfortably housed at night and during bad weather; or even when kept constantly in a barn and supplied with all its rations there.

This adaptability to confinement, together with its productiveness, makes the Milch goat particularly valuable to the residents of cities and suburban places who desire to secure a regular supply of pure, new milk, without being dependent upon the milkman, whose "milkman's milk" is not always of the best quality and which, under the most favorable circumstances, is received and consumed with more or less suspicion as to its freshness, its cleanliness and its healthfulness.

That the Milch goat would supply a long-felt want to dwellers in villages and country towns where cow's milk is difficult to obtain at any time and especially so in winter, needs no argument, as it will readily be seen that any one possessing a back-yard large enough to contain a shelter in which to house a goat or two may have a constant supply of sweet, rich milk for a very trifling outlay.

For with a couple of these hardy and productive little crea-

tures, housed in a cheap, roughly constructed shed, and pastured on a common, the owner may enjoy greater advantage from an economic and hygienic point of view than does the proud possessor of a pampered, pedigreed cow of the most fashionable breed.

First: Because milk, the exclusive diet of many infants, children and invalids, and a most essential item on the daily bill of fare of every member of the household, is furnished more cheaply by the goat, as the yield of milk, when the size of the goat and the amount of feed and care are considered, is proportionately much greater than that of the cow.

Second: Because goat's milk is richer, more nutritious and more easily digested than cow's milk. Aside from its greater degree of richness there is no appreciable difference in appearance or taste. And, also, because the Milch goat is practically immune to tuberculosis, while "the apparently healthful and therefore unsuspected cow may be, and often is, dangerously tuberculous."

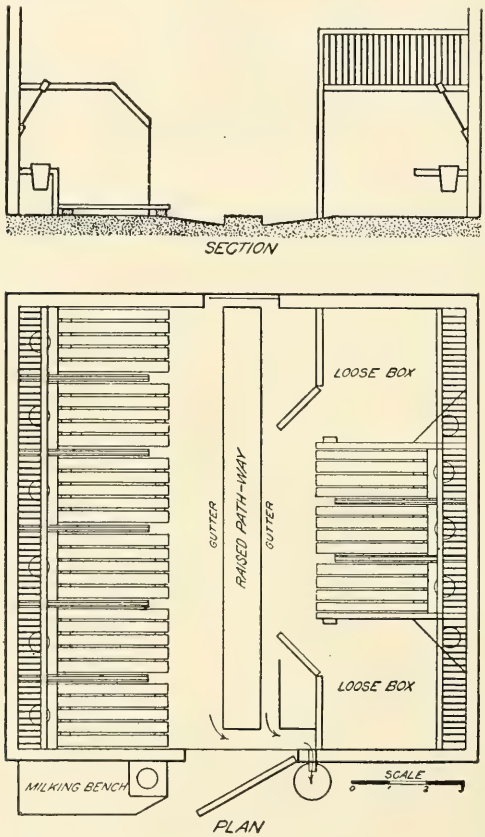
While most suburban residences have some kind of an outbuilding, which with a little contriving may be made into a comfortable goat-house, still a shed or "lean-to" of the cheapest construction will answer the purpose providing it is properly ventilated, has plenty of light and is dry and well-drained. Such a structure, six feet wide by eight or ten feet long, will comfortably house two or three goats. If more than one is kept they should be securely fastened, each one in its own little stall, particularly when being fed. In a city stable, small stalls, with low hay-racks and mangers, to suit the size and height of the animals, can be arranged in a corner in such a manner as to take up but little space.

While for back-yard dairying very inexpensive expedients may be made to answer, for commercial dairying a properly designed and constructed goat barn is a necessity. For it is true that, as Thompson says, "no one need expect to obtain a heavy flow of milk from does that are compelled to endure all sorts of weather. Everybody knows this fact in connection with the keeping of dairy cows; how much more should be demanded of a goat? The goat dislikes rain and mud, and will avoid contact with either if possible. Cold rains, sleet, and mud are very detrimental to grown goats and are almost sure to cause death in the very young kids."

"The principles that should be observed in constructing a goat barn are the same as those governing a dairy barn. The matter of ventilation is of special importance; for there is no domestic animal that suffers so much as the goat when it is deprived of an abundance of fresh air. There should be plenty of light, and the sun should be enabled to shine in."

The illustration given herewith is reproduced from "Milch

Goats and Their Management," by Bryan Hook, who describes his barn as follows: "I give herewith a plan of one of my own houses, the arrangement of which I have found to work well. It is designed to provide the greatest amount of accommodation in a limited space, the inside measurement of the house being 12 feet square.



PLAN AND SECTION OF GOAT BARN (Copied from Bryan Hook)

"The building is of wood, lined inside, and the intervening space packed with straw and shavings; thus it is seldom that frost can effect an entrance, a point of some importance if it is desired to obtain milk in winter. There are six 2-foot stalls on one side, and on the other three 18-inch stalls, and two loose boxes, the latter to be used for goats that are expected to kid or for shutting kids away from their dams.

"The upper part of the loose boxes is made—as are also the hayracks—of ⅜-inch iron bars. Down the center of the house is a raised path with gutter on each side, so arranged that the liquid

manure is discharged into a pail, as shown by the direction of the arrows. The milking bench is in the open air, but is protected from rain by the eaves of the thatched roof. This bench will be found a very necessary piece of furniture, for though the animals can be milked in their stalls, the operator will be apt to find the stooping posture extremely irksome. If this bench, about 18 inches high, is placed in some convenient situation and fitted with a manger in which the goat's ration of corn or meal is placed, she will require very little training to mount it willingly the moment she is released, and in this position the milking can be done with comfort. Even a young goat that has never been milked before will learn in a few days to stand quietly, and my friends have often enjoyed a hearty laugh over the alacrity with which each in turn scampers round to the milking bench as its chain is unfastened."

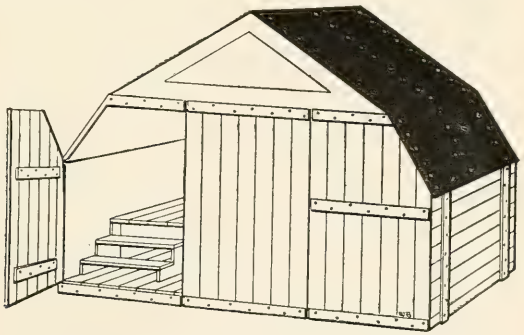


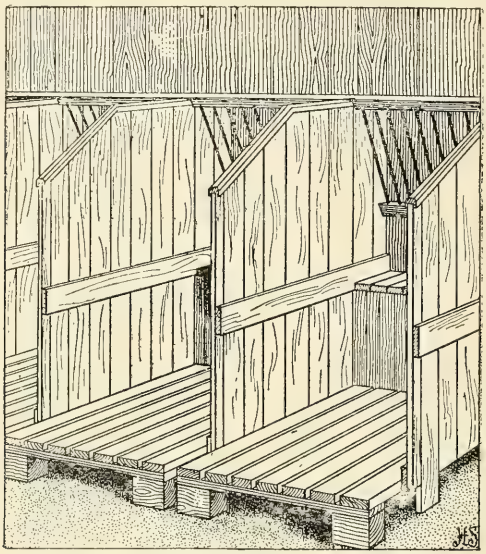
DIAGRAM OF THE PIANO-BOX MILKING-SHED.

A building in which to milk the goats may be cheaply and easily made from three upright piano boxes. The piano-box milking shed shown in the diagram given herewith was built by the writer after considerable planning and contriving. It has been found by experience to answer perfectly the purpose for which it was designed and constructed, as it furnished a clean, airy place in which to milk, and one which was easily kept in a sanitary condition, free from dust, flies, and all so-called "animal odors," as the doors, one at either end, and the muslin ventilators permit a free current of pure air.

The art of milking can be acquired by the most unskilled, city-bred person by the exercise of patience and perseverance; patience on the part of the goats and perseverance on the part of the milker. While it naturally requires practice to become an adept, the directions given by Pegler, in "The Book of the Goat," will be found of great assistance in acquiring the "gentle art."

Milch goats should be fed four times a day when in milk, and three times a day the rest of the year. When stall-fed their chief article of diet is hay, clover preferred, supplemented by

bran, oats and clean kitchen leavings, such as stale bread, apple and potato peelings, carrot, beet and celery tops, pea-pods, etc. They should be given only as much hay or grain as they will eat at one feeding; this amount is easily learned by experience and observation. The hay should be fed from little racks, above each



GOAT STALLS (Copied from Bryan Hook)

small manger, with bars or slats sufficiently close together to prevent them from pulling down more than a mouthful at a time. In order to keep goats economically, this is important, as these fastidious and wasteful little creatures will not eat anything that has been trodden under foot or soiled in any manner. When obtainable it will be found advisable to furnish them with brush-wood and tree trimmings in order to indulge them in their deer-like propensity for browsing and bark-peeling.

A yard, well drained and with a hard surface, should be connected with the barn, where the animals may get air and exercise during the day, if they do not have the run of a pasture. It is also a good plan to have an open shed in the goat yard, where the animals may go for protection from storms or the heat of the sun.

Where goats have access to a pasture having gravelly or rocky soil, their hoofs will be kept worn down by natural process; but where they are confined in barns and small inclosures, the hoofs will grow too long, and will interfere to a large extent with the movement of the animals. In this shape the hoofs will catch and hold a considerable amount of dirt, which is difficult

to remove, and which is liable to make the parts sore and more subject to foot-rot than when the hoof is clean and in good condition. It is not difficult, however, to keep the hoofs properly pared with a sharp knife or clippers.

It is also most essential to the health and well-being of goats which are kept closely confined that they be thoroughly and frequently groomed. This will keep both hair and skin of the animals perfectly clean and free from all manner of parasites.

GROOMING A MILCH GOAT, USING A COMMON FIBER SCRUBBING-BRUSH FOR THE PURPOSE.

The fancier who cares for and milks his goats himself will soon find that an hour or two a day thus spent will prove a very pleasant and satisfying occupation. The care of these "little giant milk producers," so aptly described by Hook as "the most intelligent, the most engaging, and most picturesque of domestic cattle," opens an inviting recreation or occupation, not only to men, but to women and even to children, commending itself especially to those whose health requires some light form of outdoor work, either as a vocation or an avocation. A great advantage, from an economic point of view, is that it requires but a

small outlay to establish or to maintain a small goat dairy. In fact, there are few undertakings which can be commenced on so small a scale that can be made to pay so well, both in pleasure and profit.

The goat-keeper will invariably find a ready market for whatever milk is not needed in his own household, as physicians are prescribing it more and more, whenever obtainable, as an ideal nutrient for infants or invalids. Sold for this purpose, and in this way, goat's milk does not enter into competition with cow's milk at all, and readily brings from forty to sixty cents per quart.

With regard to the feed, the methods of feeding, the interior arrangement of the goat-shed or barn and the care of the goats in general, it will be found advisable for the amateur fancier to follow, so far as possible, the practice advocated by Crepin, the French, Pegler and Hook, the English, or Dettweiler and Schneider, the German, authorities. Naturally each goat-keeper should adopt such of these authors' methods as are best suited to his own environment.

At the present time, those who wish to establish a small home dairy are obliged to depend almost entirely upon the native goat, for owing to the limited number of pure-bred Milch goats in this country, and as unfortunately Milch goat breeding is not yet an established industry, it will be a long time before the supply of either pure-bred or grade does equals the demand.

Considerable advantage may be derived by keeping two goats instead of one, the amount of time and trouble required being very little greater, whereas the results derived are more than double. The best plan is to begin by purchasing one that has just kidded, and when that one is becoming dry, to procure another just about to kid. By this means a regular supply of "certified" milk may be had the year round.

Pegler in his "Book of the Goat" gives the following useful advice to intending purchasers:

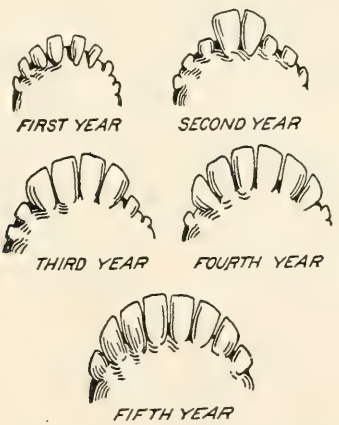
"In buying a goat, as in buying a horse, some knowledge and judgment are absolutely necessary to prevent one's being defrauded. Regarding the quantity of milk the goat is said to give, it is best not to take for granted that "she gives two quarts a day," but rather let the intending purchaser see the goat milked twice, if possible, before buying the animal; there will be then no doubt about the quantity given."

"A goat that yields less than a quart a day is not considered a good milker; if she yields two quarts a day she may be regarded as profitable, provided the yield is maintained for six or seven months. A doe yielding three pints a day with her first kid need not be set aside as an indifferent animal, as she will, in all probability, give twice that quantity on subsequent occasions."

There are certain points by which a good milch goat may generally be recognized, the principal feature being the shape of

the body, the udder and the teats. The intending purchaser should look for a goat with a large, deep body with ribs well rounded, affording plenty of room for a big stomach. A heavy milker is generally wider and deeper at the hind-quarters than at the chest, with meagre body and protruding hip-bones. Thinness is no drawback if the animal is a good feeder. The udder should be large, thin in substance, soft and elastic to the touch. When quite full it will be greatly distended, but after milking it should shrink up to a very much smaller size. A goat which has a large udder when in milk, will exhibit very little when dry. When in good health milch goats carry their heads erect, their eyes are bright and sparkling, with a cheerful, inquisitive and intelligent expression; the nose is dry, nostrils moist, and mouth and gums a bright red, and the breath is sweet.

With the aid of the accompanying illustration from "Milch Goats and Their Management," the age of a goat, until after it is 4 years old, may be readily determined. During the first year a kid's teeth are small and even and sometimes separated, as shown in the cut; the second year the two front teeth are much



larger and higher; the third year two more large front teeth are added; the fouth year two more: and the fifth year two additional large teeth, which completes the set.

Common goats, which are fairly good animals, may, with a little persistent search, occasionally be found in the outskirts of our cities or towns, generally in the sections inhabited by our foreign population, where flocks of from three or four to a dozen goats may quite frequently be seen running at large in vacant lots or on the commons.

The fall of the year is the best time to buy, when free pasturage becomes scarce. Then owners are generally willing to part with even their best goats at reasonable prices, rather than feed

and house them through the winter, when provender is high and stabling facilities often inadequate.

Good native goats usually cost from two to twenty dollars. Prices vary in different localities. Pure-bred and imported Swiss goats are quoted at from $25 to $50 per head for kids under one year, and from $35 to $100, and even more, for yearlings and older. They are exceedingly difficult to obtain even at these prices.

It is much to be regretted that, while the experts of the U. S. Department of Agriculture have been for years engaged in working out many other important problems in plant and animal breeding, apparently the goat has been considered of so little value that no systematic or practical investigations have been made along scientific lines, with a view toward determining which of the foreign breeds of Milch goats are best suited to our needs; nor regarding the development of native breeds of "deep milking" goats; nor with reference to the improvement of our Common goats, by increasing the size and quality of the short-haired varieties, and thus making them more valuable for their flesh and for their skins, and as foundation stock for grade Angoras and Milch goats.

So far as attempting to overcome the ignorance and prejudice regarding the goat by any organized or systematic effort toward educating the public with reference to the economic, dietary and sanitary value of the animal we are far behind other civilized countries.

Considering, however, the fact that during the five fiscal years ending June 30th, 1910, goat-skins to the value of $137,404,900 were bought by the United States from other countries, as practically none were produced in this country, is not here, alone, an "infant industry" well worth "investigating" and "fostering"?

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